

AMENDMENTS TO THE SPECIFICATION:

Please amend the specification as follows:

On page 1, line 3, please delete title, and replace it with:
A CAMERA CONTROL SYSTEM

Please replace paragraph on page 1, beginning on line 6, ending on line 8, with the following amended paragraph:

The present invention relates to an ~~imaging system~~ camera control system, and more particularly to an ~~imaging system~~ camera control system for controlling a camera for taking images to be collectively displayed on a divided image section of a screen.

Please replace paragraph on page 1, beginning on line 33, ending on page 2, line 4, with the following amended paragraph:

In order to solve the above mentioned problems, there have been proposed a wide variety of ~~imaging systems~~ camera control systems of this type one typical example of which is disclosed in Japanese Patent Laying-Open Publication No. 2002-16909 as comprising a camera, a camera platform for supporting the camera to ensure that the camera is movable in each of the horizontal and vertical directions, and a remote controlling apparatus for controlling the camera platform to allow the camera to be sequentially moved to the specific positions to ensure that the images are taken at the specific positions, displayed as a panoramic image on a screen.

Please replace paragraph on page 2, beginning on line 5, ending on line 7, with the following amended paragraph:

The previously mentioned conventional ~~imaging system~~ camera control system can allow an operator to obtain a good grasp of the area by allowing the operator to watch the images collectively displayed on the screen as a panoramic image (surround image).

Please replace paragraph on page 2, beginning on line 8, ending on line 14, with the following amended paragraph:

The conventional ~~imaging system~~ camera control system is adapted to allow the images taken at the specific positions to be collectively displayed on the screen as a panoramic image. This means that the conventional ~~image system~~ camera control system requires the position information indicative of the specific positions linked to the screen. The conventional ~~imaging system~~ camera control system thus constructed as previously mentioned, however, encounters such a problem that it is tedious for the operator to operate the remote controlling apparatus to have the position information linked to the screen under the conventional imaging apparatus being shared by operators.

Please replace paragraph on page 2, beginning on line 16, ending on line 21, with the following amended paragraph:

It is, therefore, an object of the present invention to provide an ~~imaging system~~ camera control system which can enhance its operational performance with no initial setup on the specific positions each to be occupied by the camera to allow the operator to easily obtain a good grasp of the specific area through the images taken at the specific positions, and displayed on the image sections.

Please replace paragraph on page 2, beginning on line 22, ending on line 33, with the following amended paragraph:

In accordance with one aspect of the present invention, there is provided an ~~imaging system~~ camera control system, comprising: a camera to be disposed in a remote place, the camera having an optical axis; driving means for driving the camera to have the optical axis of the camera moved in each of horizontal and vertical directions; position detecting means for detecting a position of the optical axis of the camera in each of the horizontal and vertical directions; position information storing means for storing position information indicative of the position of the optical axis of the camera to have the position information

linked to an image taken at the position by the camera; and remote controlling apparatus to be electrically connected to the driving means through a communication network to control the driving means, the remote controlling apparatus including display means for displaying on a screen the image taken at the position by the camera to have the screen linked to the position information.

Please replace paragraph on page 2, beginning on line 34, ending on page 3, line 4, with the following amended paragraph:

The ~~imaging-system~~ camera control system thus constructed as previously mentioned can allow an operator to obtain a good grasp of the area by allowing the operator to watch the image displayed on the screen by reason that the position of the camera is automatically detected by the position detecting means when the camera is moved in the horizontal and vertical directions, the images being stored in conjunction with the positions each occupied by the camera, the images being sequentially taken by the camera to be displayed on the screen in conjunction with the detected position.

Please replace paragraph on page 3, beginning on line 5, ending on line 8, with the following amended paragraph:

The ~~imaging-system~~ camera control system thus constructed as previously mentioned can enhance its operational performance to take an image in an area without being tediously operated by an operator in an initial stage by reason that the position of the camera is automatically detected by the position detecting means.

Please replace paragraph on page 3, beginning on line 9, ending on line 12, with the following amended paragraph:

In the ~~imaging-system~~ camera control system according to the present invention, the screen has a divided image section. The display means is adapted to display images sequentially taken at the respective positions by the camera on the divided image

section linked to the detected positions.

Please replace paragraph on page 3, beginning on line 13, ending on line 19, with the following amended paragraph:

The ~~imaging-system~~ camera control system thus constructed as previously mentioned can allow an operator to obtain a good grasp of the remote area by allowing the operator to watch the images displayed on the divided image section by reason that the position of the camera is automatically detected by the position detecting means when the camera is moved in the horizontal and vertical directions, the images being stored in conjunction with the positions each occupied by the camera, the images being sequentially taken by the camera to be displayed on the screen in conjunction with the detected position.

Please replace paragraph on page 3, beginning on line 20, ending on line 23, with the following amended paragraph:

The ~~imaging-system~~ camera control system according to the present invention further comprises position registering means for registering the position detected by the position detecting means with an optical condition of the camera. The driving means is adapted to drive the camera on the basis of the registered position and optical condition.

Please replace paragraph on page 3, beginning on line 24, ending on line 32, with the following amended paragraph:

The ~~imaging-system~~ camera control system thus constructed as previously mentioned can allow an operator to obtain a good grasp of the area by allowing the operator to easily watch preset images which are taken at respective positions to be collectively displayed on the divided image section by reason that the positions linked to the images, for example eight images taken at eight positions, to be displayed on the divided image section are previously registered with the optical condition (eight optical conditions of the respective

positions) such as for example focus and magnification, the camera driving apparatus being controlled on the basis of the registered positions and optical conditions when the preset images are taken at the registered positions by the camera.

Please replace paragraph on page 3, beginning on line 33, ending on page 4, line 3, with the following amended paragraph:

In the ~~imaging system~~ camera control system according to the present invention, the screen has an enlarged image section. The image switching means is, when one of the images displayed on the divided image section is selected, adapted to allow the camera to be moved and occupy a position linked to the selected image. The ~~imaging system~~ camera control system further comprises image switching means for allowing the display means to display a moving image taken at the selected position by the camera to have the moving image displayed on the enlarged image section.

Please replace paragraph on page 4, beginning on line 4, ending on line 9, with the following amended paragraph:

The ~~imaging system~~ camera control system thus constructed as previously mentioned can, when the judgment is made that an image of a suspicious person is taken and displayed on the divided image section, display the image on the enlarged image section. This means that the ~~imaging system~~ camera control system thus constructed as previously mentioned can timely and easily switch the image between the enlarged image section and the divided image section to enhance the security.

Please replace paragraph on page 4, beginning on line 10, ending on line 14, with the following amended paragraph:

In the ~~imaging system~~ camera control system according to the present invention, the remote controlling apparatus is adapted to control the driving means at regular time intervals to have the camera sequentially take images at the positions

linked to the images displayed on the divided image section to allow the images displayed on the divided image section to be updated to the images taken by the camera.

Please replace paragraph on page 4, beginning on line 15, ending on line 23, with the following amended paragraph:

The ~~imaging-system~~ camera control system thus constructed as previously mentioned can allow an operator to watch the images collectively displayed on the divided image section, can be small in production cost, can allow only one camera to be moved and pointed at directions to take the images, and fully enhance the security by allowing the operator watch on an image taken in the suspicious and problematic direction by reason that the remote controlling apparatus is adapted to control the driving means at regular time intervals to have the camera sequentially take images at the positions linked to the images displayed on the divided image section to allow the images displayed on the divided image section to be updated to the images taken by the camera.

Please replace paragraph on page 4, beginning on line 27, ending on line 31, with the following amended paragraph:

The ~~imaging-system~~ camera control system thus constructed as previously mentioned can be small in production cost, and reduce the memory capacity of the imaging information storing apparatus by reason that the ~~imaging-system~~ camera control system according to the present invention further comprises image information storing means for storing image information indicative of the images taken by the camera.

Please replace paragraph beginning on page 4, line 32, ending on page 5, line 1, with the following amended paragraph:

In the ~~imaging-system~~ camera control system according to the present invention, the remote controlling apparatus is adapted to control the driving means to have the camera take images at predetermined time intervals at the positions. The ~~imaging-system~~ camera control system

according to the present invention further comprises difference detecting means for detecting differences of the images in each position. The remote controlling apparatus is adapted to produce a notification signal on the differences detected by the difference detecting means.

Please replace paragraph on page 5, beginning on line 2, ending on line 10, with the following amended paragraph:

The ~~imaging-system~~ camera control system thus constructed as previously mentioned can be small in production cost, allow only one camera to be moved and pointed at directions to take the images, and fully enhance the security by allowing an operator to watch on an image taken in the suspicious and problematic direction by reason that the remote controlling apparatus is adapted to control the driving means to have the camera take images at predetermined time intervals at the positions, the ~~imaging-system~~ camera control system further comprises difference detecting means for detecting differences of the images in each position, the remote controlling apparatus is adapted to produce a notification signal on the differences detected by the difference detecting means.

Please replace paragraph on page 5, beginning on line 11, ending on line 14, with the following amended paragraph:

In the ~~imaging-system~~ camera control system according to the present invention, the displaying means of the remote controlling apparatus is adapted to enlarge the image linked to a position in which the difference of the images is detected by the difference detecting means, and to display the enlarged image on the enlarged image section.

Please replace paragraph on page 5, beginning on line 15, ending on line 18, with the following amended paragraph:

The ~~imaging-system~~ camera control system thus constructed as previously mentioned can allow an operator to obtain a good grasp of the area by allowing the

operator to watch the image taken at the direction of suspicious and problematic area, and fully enhance the security of that area.

Please replace paragraph on page 5, beginning on line 19, ending on line 22, with the following amended paragraph:

In the ~~imaging system~~ camera control system according to the present invention, the remote controlling apparatus is adapted to obtain viewing angle information on a viewing angle of a lens unit of the camera to calculate a distance in each of the horizontal and vertical directions on the basis of the viewing angle information.

Please replace paragraph on page 5, beginning on line 23, ending on line 25, with the following amended paragraph:

The ~~imaging system~~ camera control system thus constructed as previously mentioned can display as a panoramic image on the divided image section the images taken by the camera moved on the basis of the viewing angle information of each of the horizontal and vertical direction.

Please replace paragraph on page 5, beginning on line 26, ending on line 29, with the following amended paragraph:

The ~~imaging system~~ camera control system thus constructed as previously mentioned can allow the panoramic images to be respectively delivered to users by reason that the images taken at respective positions by the camera stored in the image information storing means of the remote controlling apparatus.

Please replace the paragraph on page 5, beginning on line 30, ending on line 34, with the following amended paragraph:

In the ~~imaging-system~~ camera control system according to the present invention, the remote controlling apparatus further includes inputting means for inputting descriptive information on the images taken at the respective positions, and the display means is adapted to superimpose the descriptive information inputted by the inputted means on the respective images to be displayed on the divided image section or the enlarged image section.

Please replace the paragraph beginning on page 5, line 35, ending on page 6, line 3, with the following amended paragraph:

The ~~imaging-system~~ camera control system thus constructed as previously mentioned can allow an operator to obtain a good grasp of the area by allowing the operator to watch the images displayed on the divided image section or the enlarged image section. This means that the ~~imaging-system~~ camera control system according to the present invention can allow the operator to immediately rush to that area if necessary.

Please replace the paragraph on page 6, beginning on line 6, ending on line 8, with the following amended paragraph:

The features and advantages of an ~~imaging-system~~ camera control system according to the present invention will be more clearly understood from the following description taken in conjunction with the accompanying drawings:

Please replace the paragraph on page 6, beginning on line 9, ending on line 10, with the following amended paragraph:

FIG 1 is a block diagram showing a first embodiment of the ~~imaging-system~~ camera control system according to the present invention;

Please replace the paragraph on page 6, beginning on line 11, ending on line 12, with the following amended paragraph:

FIG 2 is a block diagram showing a remote controlling apparatus of the ~~imaging-system~~ camera control system according to the present invention;

Please replace the paragraph on page 6, beginning on line 13, ending on line 15, with the following amended paragraph:

FIG 3 is a schematic view showing a screen on which an image is being displayed, the screen forming part of the remote controlling apparatus of the ~~imaging-system~~ camera control system according 15 to the first embodiment of the present invention;

Please replace the paragraph on page 6, beginning on line 16, ending on line 18, with the following amended paragraph:

FIG 4 is a flowchart showing a process in which the preset and panoramic images are taken in an area by the ~~imaging-system~~ camera control system according to the first embodiment of the present invention; and

Please replace the paragraph on page 6, beginning on line 19, ending on line 20, with the following amended paragraph:

FIG 5 is a block diagram showing an ~~imaging-system~~ camera control system according to the second 20 embodiment of the present invention.

Please replace the paragraph on page 6, beginning on line 23, ending on line 24, with the following amended paragraph:

The embodiments of the ~~imaging-system~~ camera control system according to the present invention will now be described hereinafter in accordance with accompanying drawings.

Please replace the paragraph on page 6, beginning on line 25, ending on line 35, with the following amended paragraph:

(first embodiment)

Referring now to FIGS. 1 to 4 of the drawings, there is shown a first embodiment of the ~~imaging-system~~ camera control system according to the present invention. FIG 1 is a block diagram showing a first embodiment of the ~~imaging-system~~ camera control system according to the present invention. FIG 2 is a block diagram showing a remote controlling apparatus of the ~~imaging-system~~ camera control system according to the first embodiment of the present invention. FIG 3 is a schematic view showing a screen on which an image is being displayed, the screen forming part of the remote controlling apparatus of the ~~imaging-system~~ camera control system according to the first embodiment of the present invention. FIG 4 is a flowchart showing a process in which preset and panoramic images are taken in an area by the ~~imaging-system~~ camera control system according to the first embodiment of the present invention.

Please replace paragraph beginning on page 6, line 36, ending on page 7, line 6, with the following amended paragraph:

The constitution of the first embodiment of the ~~imaging-system~~ camera control system according to the present invention will be described in detail hereinafter. The imaging apparatus 20 is shown in FIG 1 as comprising a camera 1 having a lens unit, a focus motor 2, a magnification motor 3, a horizontal motor 4, a vertical motor 5, an image transforming unit 6, an image information storing apparatus 7, a camera driving apparatus 8, a position information storing apparatus 12, a preset image obtaining apparatus 13, and a data communication performing unit 19.

Please replace paragraph beginning on page 8, line 34, ending on page 9, line 9, with the following amended paragraph:

The timer 16 is adapted to start to compute an elapsed time when the camera 1 starts to be moved toward the specific position from the current position, to keep computing the elapsed

time while the camera 1 is being moved toward the specific position, the camera 1 is being adjusted in each of the focus and magnification, the preset image is being taken at that specific position by the camera 1, and the camera 1 is being moved toward a next specific position from the specific position, and to stop computing the elapsed time when the judgment is made that the next specific position is occupied by the camera 1. This means that the ~~imaging-system~~ camera control system according to the present invention can prevent the camera 1 from being moved by the camera driving unit 9 until the next specific position is occupied by the camera 1 by judging whether or not the elapsed time is being computed by the timer 16. In this embodiment, the preset image obtaining apparatus 13 constitutes camera driving means.

Please replace paragraph on page 16, beginning on line 22, ending on line 30, with the following amended paragraph:

In this embodiment, the camera 1 is moved to each of the specific positions with the angle of 45 degrees when the panoramic image is taken by the camera 1. Here, this angular distance 45 degrees is determined on the basis of the viewing angle of the camera 1 under the condition that the camera 1 is adjusted in magnification with a numeral "1", and adjusted in focus with an infinite distance (in the step S3). This means that the panoramic image can be seamlessly produced from the images taken at the specific positions under the condition that the camera 1 is moved to each of the specific positions with the angle of 360 degrees/8. However, the angular distance may be arbitrarily determined by the remote controlling apparatus 21 of the ~~imaging-system~~ camera control system according to the present invention.

Please replace paragraph beginning on page 16, line 31, ending on page 17, line 7, with the following amended paragraph:

From the above detail description, it will be understood that the ~~imaging-system~~ camera control system according to the first embodiment of the present invention can allow an operator to obtain a good grasp of the area by allowing the operator to watch the images taken in the area, and collectively displayed on the divided image section 40 by reason that

the current position counter 10 is adapted to detect the current position of the camera 1, the image information storing apparatus 7 has stored therein the image information indicative of the images taken at the specific positions under the condition that the image is linked to the position, to allow the images sequentially taken at the respective positions by the camera 1 to be collectively displayed on the divided image section 40 linked to the positions. The ~~imaging-system~~ camera control system according to the first embodiment of the present invention can enhance its operational performance without initial condition information on the positions by reason that the position of the camera 1 is automatically detected by the position detecting means when the camera 1 is moved in the horizontal and vertical directions.

Please replace paragraph on page 17, beginning on line 8, ending on line 14, with the following amended paragraph:

The ~~imaging-system~~ camera control system according to the first embodiment of the present invention can allow an operator to easily obtain a good grasp of the area by allowing the operator to watch the preset images taken in the area, and collectively displayed on the divided image section 40 by reason that the imaging apparatus is adapted to allow the camera 1 to be moved on the basis of the position information and the optical condition information on the focus and magnification stored in the position information storing apparatus 12 to ensure that the preset images are sequentially taken, collectively displayed on the divided image section 40.

Please replace paragraph on page 17, beginning on line 15, ending on line 23, with the following amended paragraph:

The ~~imaging-system~~ camera control system according to the first embodiment of the present invention can, when the judgment is made that an image of a suspicious person is being displayed on any one of the image sections 32 to 39 of the divided image section 40, display that image on the enlarged image section 31 by reason that the display unit 61 has a screen having an enlarged image section 31 to allow the camera 1 to be moved to a position specified on the basis of that judgment, and to allow the camera 1 to take a

moving image to be displayed on the enlarged image section. This means that the ~~imaging-system~~ camera control system thus constructed as previously mentioned can easily switch the image between the enlarged image section and the divided image section 40 to enhance the security.

Please replace paragraph on page 17, beginning on line 24, ending on line 31, with the following amended paragraph:

The ~~imaging-system~~ camera control system according to the first embodiment of the present invention can allow an operator to easily obtain a good grasp of the area by allowing the operator to watch the preset images taken in the area, collectively displayed on the divided image section 40 by reason that the remote controlling apparatus 21 is adapted to control the imaging apparatus on the basis of the position information at predetermined time intervals to allow the camera 1 to be sequentially moved to the specific positions, and to have the camera 1 take the images to be collectively displayed on the divided image section 40 in response to the respective specific positions.

Please replace paragraph beginning on page 17, line 32, ending on page 18, line 3, with the following amended paragraph:

The storing means of the imaging apparatus 20 of the ~~imaging-system~~ camera control system according to the present invention can be small in memory size by reason that the remote controlling apparatus 21 comprises a storing unit 64 having stored therein position information 35 indicative of the positions and image information indicative of the images taken at the positions by the camera 1 to ensure that the positions of the image information are respectively linked to the images of the image information. This leads to the fact that the imaging apparatus of the ~~imaging-system~~ camera control system according to the first embodiment of the present invention can be small in production cost.

Please replace paragraph on page 18, beginning on line 4, ending on line 12, with the following amended paragraph:

Even if the ~~imaging-system~~ camera control system according to the first embodiment of the present invention comprises a plurality of remote controlling apparatuses each of controlling the imaging apparatus 20 to ensure that the images are taken at the positions by the camera, each of the remote controlling- apparatuses comprising a storing unit having stored therein position information indicative -of the positions and image information indicative of the images taken at the positions by the camera 1 to ensure that the positions of the image information are respectively linked to the images of the image information, the storing means of the imaging apparatus of the ~~imaging-system~~ camera control system according to the first embodiment of the present invention can be small in memory size.

Please replace paragraph on page 18, beginning on line 13, ending on line 26, with the following amended paragraph:

The ~~imaging-system~~ camera control system according to the first embodiment of the present invention can allow the remote controlling apparatus 21 to display the images taken in respective directions by the camera 1 of the imaging apparatus 20 on the divided image section 40 as a panoramic image by- reason that the imaging apparatus 21 is adapted to calculate the distance between the current position and the specific position on the basis of the viewing angle of the lens unit of- die camera 1, the camera driving apparatus is adapted to drive each of the horizontal and vertical motors to have the camera 1 moved on the basis of the distance when the images are taken as the panoramic image at the respective positions by the camera 1. Even if the imaging apparatus is controlled by each of remote controlling apparatuses, the ~~imaging-system~~ camera control system according to the first embodiment of the present invention can allow the remote controlling apparatuses to display respective panoramic images on the respective divided image section 40 by reason that each of the remote controlling apparatuses includes a storing unit 64 having stored therein image information indicative of the images to be collectively displayed as the panoramic

image.

Please replace paragraph on page 18, beginning on line 27, ending on line 33, with the following amended paragraph:

The ~~imaging-system~~ camera control system according to the first embodiment of the present invention can allow the operator to simply obtain a good grasp of the area by allowing the operator to watch the images displayed on the image sections 32 to 39 of the divided image section 40 by reason that the descriptive information is superimposed on each of the images displayed on the image sections 32 to 39 of the divided image section 40 and the image displayed on the enlarged image section 31. For example, the operator can immediately go straight to the area if necessary.

Please replace paragraph on page 19, beginning on line 10, ending on line 16, with the following amended paragraph:

Referring to FIG 5, there is provided an ~~imaging-system~~ camera control system according to the second embodiment of the present invention. The constitutional elements of the second embodiment are substantially the same as those of the first embodiment except for the constitutional elements appearing in the following description. Therefore, the constitutional elements of the second embodiment the same as those of the first embodiment will not be described but bear the same reference numerals and legends as those of the first embodiment.

Please replace paragraph on page 20, beginning on line 29, ending on line 35, with the following amended paragraph:

While there has been described in the forgoing embodiment about the fact that the remote controlling apparatus 21 of the ~~imaging-system~~ camera control system according to the second embodiment of the present invention further comprises a speaker unit for producing a buzzer sound in response to the notification signal received from the imaging apparatus 30

through the data communication performing unit 65, the remote controlling apparatus 21 may further comprise a light emitting unit for producing and emitting a light blinking on and off as a security information to be immediately received by the operator.

Please replace paragraph beginning on page 20, line 36, ending on page 21, line 17, with the following amended paragraph:

In this embodiment, the imaging apparatus 30 of the ~~imaging system~~ camera control apparatus according to the second embodiment of the present invention further comprises a difference judging apparatus 70. The remote controlling apparatus, however, may further comprises a difference judging apparatus to be electrically connected to each of the controlling unit 63 and the storing unit 64. In this case, the difference judging apparatus is adapted to control each of the camera driving apparatus 8 and the preset image obtaining apparatus 13 to have the camera 1 moved at the predetermined time intervals to ensure that the images are sequentially taken at the respective positions. The difference judging apparatus is adapted to judge whether or not the current image is substantially different from the prior image in each positions, and to transmit to the remote controlling apparatus 21 through the data communication performing unit 19 a notification signal with position information on a position in which the current image is substantially different from the prior image. When, on the other hand, the notification signal is received by the remote controlling apparatus 21 from the imaging apparatus 30 through the data communication performing unit 65, the controlling unit 63 is adapted to control each of the display unit 61 and the storing unit 64 to enlarge and display on the enlarged size image section the image linked to a position specified by the notification signal, and to have the speaker unit produce a buzzer sound in response to the notification signal.

Please replace paragraph on page 21, beginning on line 20, ending on line 24, with the following amended paragraph

In accordance with the present invention, there is provided an ~~imaging system~~ camera control system which can enhance its operational performance with no initial setup on specific positions each to be occupied by the camera to allow the operator to easily and immediately obtain a good grasp of the area by allowing the operator to watch the images collectively displayed on the divided image section or the image displayed on the enlarged size image section.